

CLAIMS:

1        1. A screen assembly for a shale shaker for treating  
2        drilling fluid with solids therein, the shale shaker having a  
3        basket for holding a screen assembly, a vibratory device for  
4        vibrating the basket and the screen assembly, and a lower  
5        receptacle for receiving drilling fluid passing through the screen  
6        assembly, the screen assembly comprising

7                at least two screening members, each screening  
8        member having a surface area, the screen assembly having  
9        a top,

10               the at least two screening members connected by  
11        sewing material,

12               the screen assembly mountable on the basket so  
13        that solids separated from the drilling fluid are moved  
14        off the top of the screen assembly by motion imparted to  
15        the screen assembly by the vibratory device.

1        2. The screen assembly of claim 1 whererin the sewing  
2        material extends across substantially all of the surface area of  
3        the at least two screening members.

1        3. The screen assembly of claim 1 wherein

2               the at least two screening members comprise a  
3        plurality of layers of screening material.

1        4. The screen assembly of claim 3 wherein

2               the plurality of layers of screening material  
3        include at least a first fine screen layer and a second coarse  
4        screen layer.

1        5. The screen assembly of claim 1 wherein the sewing  
2        material comprises thread.

1        6. The screen assembly of claim 1 wherein the sewing  
2        material comprises a pattern of spaced-apart stitches over  
3        substantially all surface area of the at least two screening

4 members.

1 7. The screen assembly of claim 1 wherein one of the at  
2 least two screening members is a perforated plate.

1 8. The screen assembly of claim 1 wherein the at least two  
2 screening members includes at least one three-dimensional screening  
3 member.

1 9. The screen assembly of claim 8 wherein the at least one  
2 three-dimensional screening member is made of screening material.

1 10. The screen assembly of claim 9 wherein the screening  
2 material comprises a plurality of layers of screening material.

1 11. The screen assembly of claim 10 further comprising  
2 one of the at least two screening members comprising  
3 a base, and

4 the plurality of layers of screening material  
5 connected to the base.

1 12. The screen assembly of claim 11 wherein the base is a  
2 perforated plate.

1 13. The screen assembly of claim 12 wherein  
2 the plurality of layers of screening material are  
3 connected to the base with sewing material.

1 14. The screen assembly of claim 1 wherein  
2 the sewing material comprises a plurality of spaced-  
3 apart staples.

1 15. The screen assembly of claim 11 wherein the base is a  
2 layer of coarse mesh.

1 16. The screen assembly of claim 1 wherein  
2 the at least two screening members comprise at least  
3 two layers of screening material and a perforated base, the at  
4 least two layers of screening material sewn together to form  
5 a combined screen, the combined screen sewn to the perforated  
6 base.

1 17. The screen assembly of claim 1 further comprising  
2 the sewing material comprising thread in a stitch

3           pattern across the at least two screening members,  
4                    a pattern of expandable material on and  
5                    corresponding to the stitch pattern, and

6                   the thread passing through holes in the pattern of  
7                    expandable material, the expandable material expanded within  
8                    the holes following extraction of a needle therefrom, the  
9                    needle used to apply the sewing material, to inhibit tearing  
10                  of either of the at least two screening members between holes.

1           18. The screen assembly of claim 1 further comprising  
2           multiple stitches of sewing material adjacent each other in areas  
3           of increased wear of the screen assembly.

4           19. A method for making a screen assembly for a shale shaker,  
5           the shale shaker having a basket for holding a screen assembly, a  
6           vibratory device for vibrating the basket and the screen assembly,  
7           and a lower receptacle for receiving drilling fluid passing through  
8           the screen assembly, the screen assembly mountable on the basket so  
9           that solids separated from the drilling fluid are moved off the top  
10           of the screen assembly by motion imparted to the screen assembly by  
11           the vibratory device, the method comprising

12                   placing at least two screening members adjacent each  
13                   other, each of the at least two screening members suitable for  
14                   screening the drilling fluid, and

15                   sewing together the at least two screening members  
16                   with sewing material.